ELECTRIC REFRIGERATION NEWS

The business newspaper of the electric refrigeration industry

VOL. I. NO. 10 — DETROIT, MICHIGAN, FEBRUARY 16, 1927 — PRICE FIVE CENTS

The Permanent Exhibit Pays

Commonwealth Edison Company Proves That Refrigerators Well Demonstrated Are Half Sold

By Dorothy Digman

Three models on the floor and a couple of wall signs! You've seen this kind of an electric refrigerator display in all too many stores. Nothing colorful to attract the eye. Nothing to arouse interest or stimulate appetite. No showmanship, and therefore no sales, or at least, not as many as there might be otherwise.

The Commonwealth Edison Company, Chicago, sells the Servel electric refrigerator, and knows how to stage it.

While a certain section of their Electric Shops is reserved for permanent display, the floor arrangement is never allowed to grow monotonous. The sample cabinets are changed around and the display freshened up with decorations so regularly that old-time customers walking through the store will stop and remark about "these new models you've just gotten in," and it's all the same stock, of course.

Booths are erected occasionally, too You see an attractive autumn leaf bower in one of the illustrations. This is rather elaborate and required some carpentry, but a booth can be simulated with a large table in front of the refrigerator and a lattice-work arch or canopy over the table, on which to twine some flowers or leaves or twisted strips of bright colored crepe paper. A frame work of this kind may be taken down, retrimmed and put up again as often as desired.

It gives your refrigerator display a "party appearance"—makes people stop and look as they pass through the store, or gravitate to that section for a closer view. even though they may be headed in another direction.

"Department of the Interior"

And don't let your decorating efforts stop with the appearance of your sales floor. Consider the interior of the refrigerators. Your salesman, in talking to a prospect, works up his demonstration to a certain point before he opens the doors of the cabinet and displays the interior. The outside of the Servel presents a very pleasing appearance. When the doors are thrown open, the picture is more complete when the shelves are nicely arranged with colorful food products. At least one refrigerator in your display should be trimmed up all the time—with canned goods and specially prepared dishes which are intended to feast the eye rather than the palate.

At the Commonwealth Edison Electric Shops Miss Catherine Spengler is in charge of all demonstrations throughout the main downtown store, and the six branch stores in neighborhood districts. If electric percolators, toasters, or waffle griddles are to be demonstrated, Miss Spengler directs the purchase of supplies, the arrangement of the booths and the actual cooking operations.

These demonstrations are periodical, but the Servel exhibit is permanent, so Miss Spengler takes particular interest in the "department of the interior," as she calls the arrangement of the interior of the Servel cabinets Her idea is to attract womenfolks in particular, although she has never known any gentlemen to run from the section because dainty looking desserts and salads were on view.

But since the possibilities of electric refrigeration in chilling and freezing new dishes mean so much to the homemaker, the Commonwealth Edison Company believes that a demonstration of these accomplishments is just as important in the Servel exhibit as a lot of "innards" in the form of machinery which are usually displayed on the floor and shown to women prospects.

Besides interior displays for the refrigerator, an assortment of "chilled" dishes is made up and arranged on a little serving table placed in the booth. Since several refrigerators are always in operation on the Electric Shops floor, the doors cannot be left open, of course, and the table display of "frozen" and "chilled" dishes attracts attention and reminds the passing shopper that this is "one of those new electric refrigerators that makes all kinds of fancy desserts."

Synthetic Souffle, or Strawberry Suds

How does one make frozen dishes that will 'stand up" in a display on a sales floor or in a window trim under the mid-day sun? How can this store afford the expense of a permanent demonstration calling for large supplies of delicacies used in making up these recipes?

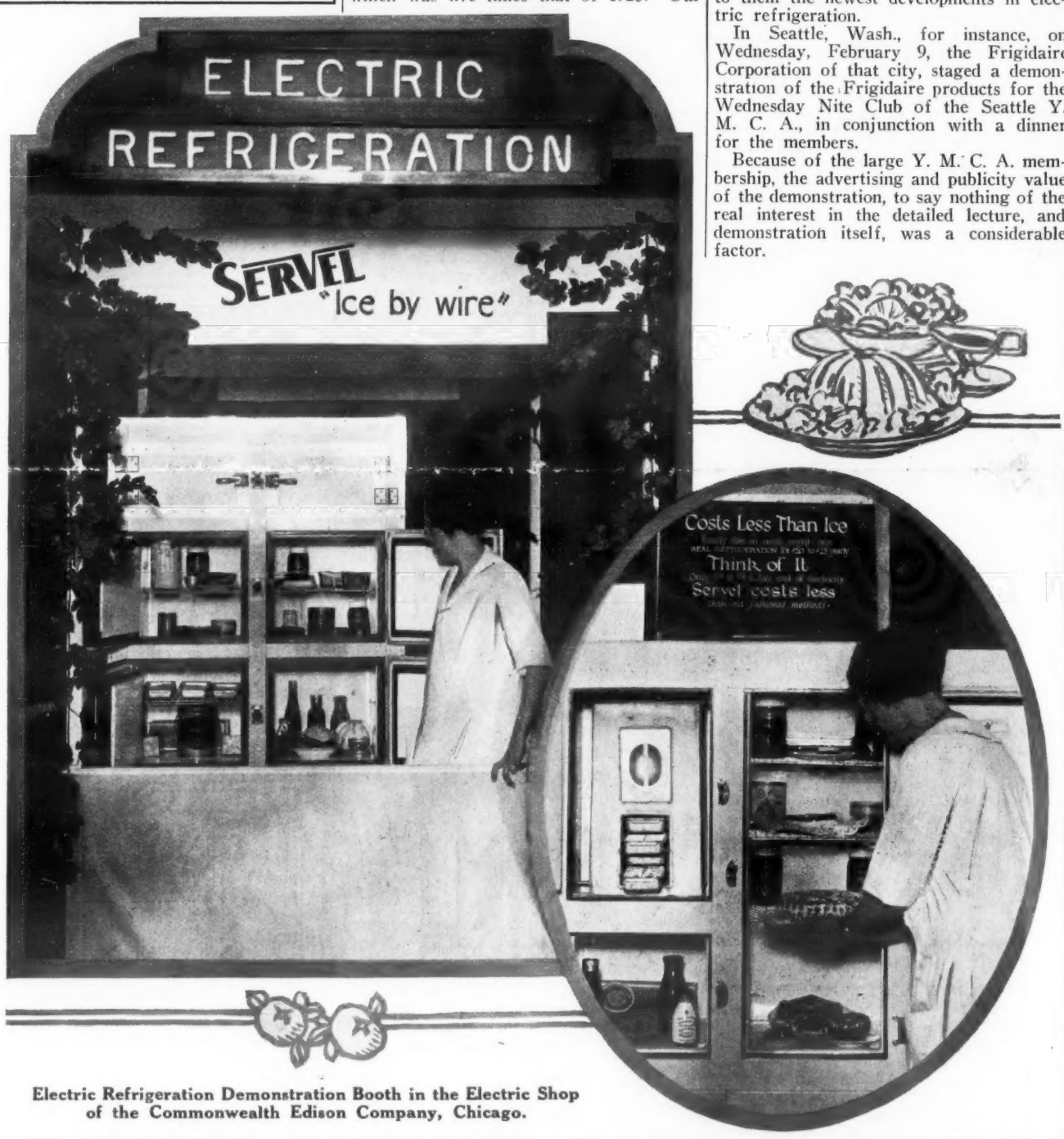
The answer is *soapsuds*—and Miss Spengler originated the idea.

Soapsuds makes mousses, creams and puddings of any flavor you can name. Soapsuds ices cakes and decorates jello dishes. A soapsuds marshmallow cake, for instance, the most alluring thing that ever came out of a French confectioner's, will "stand up" for three months in a Servel in operation. A maple mousse, twirled with soapsuds whipped cream and

(*Continued on page 2, column 3*)

Directions for Making Synthetic Desserts

Mix together 3 parts soap flakes with one part water. Stir well to dissolve flakes. Beat with electric beater until stiff and dry. Color with any desired fruit extract, leaving part of suds white to use for ornamentation. This may be put through the pastry tube like whipped cream.



Electric Refrigeration Demonstration Booth in the Electric Shop of the Commonwealth Edison Company, Chicago.

UNIVERSAL COOLER TO BUILD 20,000 MACHINES IN 1927

Increased Capital Provided for Expansion Program—Gaines Appointed Sales Manager

Announcement has been made by A. H. Meinke, director of sales of the Universal Cooler Corporation, Detroit, of the appointment of A. DeB. Gaines as sales manager. Mr. Gaines was recently sales manager of the Frigerator Division of the General Necessities Corporation, and for 12 years prior to that time was connected with the sales department of a number of automobile manufacturing firms.

Coincident with the appointment of Mr. Gaines, announcement was made of the expansion of the sales organization and the plans for a large increase in production. A complete line of domestic and commercial electric refrigerators and ice cream cabinets of all sizes will be marketed. Prices will run from $190 up.

"The manufacturing, sales and service departments have been enlarged to accommodate the production and sale of the 20,000 units that we will make this year," said Mr. Meinke. "We are confident that the 1927 sales will triple last year's mark, which was five times that of 1925. Our organization was formed in 1922, and although only a limited business was at first attempted, the business has shown a steady and healthy growth.

"Capital stock increase has been made by the corporation to finance the enlarged manufacturing program. Universal's board of directors have been increased from the original three—Patterson Farmer, president; Ford Ballentyne, vice-president, and A. H. Meinke, secretary-treasurer and director of sales—to seven. The more recent members of the board are E. S. Evans, Raymond G. St. John, Curtis G. Dunham and Harry E. Turnstall. All are residents of Detroit."

The Universal Cooler Corporation of Canada, Ltd., is located at Windsor, Ontario, Canada, and this organization will provide for Canadian sales and service.

AUTO BODY FIRM TO BUILD REFRIGERATORS

The Rex Manufacturing Company, Connersville, Indiana, for many years known as designers and builders of automobile bodies and tops, are now manufacturing a complete line of all-steel cabinets for electric refrigerators. Before announcing their entrance into the field, the engineering department made a number of rigid tests on the different models, and particular attention was paid to the matter of insulation.

The company has not reached production capacity, but believes that the electric refrigeration field offers a good opportunity for their product. C. C. Hull is president of the company.

4500 Electric Refrigerators Sold By Cities Service in 1926

A total of 4,500 domestic and commercial electric refrigerators were sold in 1926 by the new business departments of Cities Service Company. These machines, it is estimated, will consume 3,200,000 kilowatt hours of electricity yearly.

Milwaukee Dealer Stages Series of Card Parties for Club Women

Carefully Developed Plan Brings Prospects to Store in Groups of Thirty-Six—Three Parties Sponsored Each Week.

By Edwin J. Nally.

A successful merchandising idea for dealers in electric refrigerators has been devised and is now being operated by the Stover Company, 516 Grand Avenue, Milwaukee, Wisconsin, local Frigidaire dealers, one of the largest concerns in its field in Wisconsin. The plan of the Stover company was inaugurated for the two-fold purpose of securing good will and creating interest in Frigidaire. That the plan is accomplishing these ends is the firm belief of the officials of the company.

Early in January of this year, officials of the Stover company conceived the idea of sponsoring afternoon card parties for the various women's clubs of Milwaukee. It required a great deal of careful consideration and planning before the company was able to decide what would be the most effective manner of introducing the idea to the women.

Club Presidents Invited First.

Finally it was decided to sponsor a party, consisting of a luncheon and an afternoon of cards, for the presidents of all the women's clubs in Milwaukee. Invitations were sent out and the party, which was held early in January, was attended by the president of practically every woman's club in the city. The party was held in the sales rooms of the Stover company, located in the heart of Milwaukee's downtown shopping district.

John Hill, manager, and Mrs. G. H. Meurer, saleslady, who also acts in the capacity of hostess, explained the idea to the clubwomen. The women were told that the Stover company would sponsor parties three times a week, and that the entire expense and all the details would be taken care of by the company. These parties would consist, the women were told, of a luncheon at 12:30, followed by a twenty-minute demonstration of the Frigidaire, after which the balance of the afternoon would be given over to cards.

The idea met with instant and hearty approval, and from that time on card parties have been held in the Stover salesrooms three times a week. Evidence of the manner in which the clubwomen received the idea can be judged from the fact that parties have been scheduled up until Christmas of this year. The average attendance numbers thirty-six, which means nine tables of cards, all that can be accommodated in the company's salesrooms. The company arranges for the luncheon, has the food prepared outside and brought to the store, where it is served by employees. If a member of any club purchases a Frigidaire within thirty days after the day her club holds a party, the treasurer is presented with $5.00 by the Stover company.

Commenting on the plan, Mrs. Meurer, who is in charge of the parties, stated:

"We find that these parties are of mutual benefit to the clubs and to us. In the first place they afford the clubs an opportunity of holding their parties without any responsibility whatever. Then, too, it gives us a splendid opportunity of explaining and demonstrating our product to a large group of women at one time.

No High-Pressure Salesmanship

"We find also that the demonstration is of great interest to the women—all of whom are prospective buyers. There is no high pressure salesmanship connected with the plan. We simply take advantage of the time to educate them to the advantages of a Frigidaire.

"We secure the good will of the women toward our product and toward our company as well. We have our product on display, and all the time the women are playing cards they see it, and it leaves an indelible impression in their minds. Sooner or later they will be in the market for a refrigerator, and when they are they will immediately think of our product."

Now here is an idea that is well worth the consideration of every electric refrigerator dealer in the country. It can be put into operation without any great expense, and it is an invaluable advertising medium. Think it over, refrigerator dealers! You may be able to cash in on the idea just as the Stover company is doing.

SEATTLE DEALER GIVES Y. M. C. A. DEMONSTRATION

Some of the service clubs, the Y. M. C. A. of different cities, or other organizations in various localities, whose entertainment committees have difficulty in securing a satisfactory and willing speaker each week, may be eager to have explained to them the newest developments in electric refrigeration.

In Seattle, Wash., for instance, on Wednesday, February 9, the Frigidaire Corporation of that city, staged a demonstration of the Frigidaire products for the Wednesday Nite Club of the Seattle Y. M. C. A., in conjunction with a dinner for the members.

Because of the large Y. M. C. A. membership, the advertising and publicity value of the demonstration, to say nothing of the real interest in the detailed lecture, and demonstration itself, was a considerable factor.

NEW YORK IROQUOIS DISTRIBUTOR HAS FORMAL OPENING

The Iroquois Electric Refrigeration Sales Corporation, newly appointed distributors for the Metropolitan district, formally opened their new showrooms at 1819 Broadway, New York City, February 15. Several officials of the public service companies of the metropolitan district were present, as well as architects associated with large building enterprises. After a luncheon given for the invited guests, representatives of the manufacturers explained and demonstrated the operation of the Iroquois units.

ZEROZONE WISCONSIN COMPANY ORGANIZED

The Zerozone Wisconsin Company, 995 Third Street, Milwaukee, local dealers for the "Zerozone" electric refrigerator, was recently incorporated for $25,000. Frank W. Branen, Max W. Nohl and Henry M. Blume are the incorporators.

The "Zerozone" display of the only electric refrigeration exhibit at the recent convention of the Wisconsin Retail Hardware Association created a great deal of favorable comment.

Service Delays Turn Customers Into Kickers, Says Winston Paul

Big Problem of Marketing Electric Refrigeration is to Develop a Correct Sales Policy—Installation and Service Department the Neck of the Bottle in Any Organization.

On Friday, February 11, Winston Paul, president of the Domestic Electric Company, New York distributor for Frigidaire, addressed the Advertising Club of *The New York Times* in the conference room on the second floor, as follows:

"I am very glad of the opportunity to come here and to tell you a little about what we are trying to do here in New York City. Some people will think Frigidaire has had a very meteoric rise, and it is true that only a short time ago we never heard about it, but it is not like a flower that has bloomed with but very little background, but it promises later on a greater growth.

"The problem in the marketing of refrigeration is in trying to create and develop a correct sales policy for the product. I know of a few industries, however, even in the automobile industry, whose path of progress is strewn with as many wrecks as the refrigeration industry. A great many men have put large sums of money into electrical refrigeration and have lost out. A great many have tried to perfect the idea of the application of the principles of mechanical refrigeration to a small unit. The principle of refrigeration applied to ton plants and large units is something that has been going on for many years, but to try and put that same principle in miniature form, applicable to a small household box, is a problem which a great many men have worked on in vain.

Real Public Acceptance Started Two Years Ago.

"The real public acceptance of refrigeration started two years ago this March or April. Up to that time the public had not been particularly interested in it. I have been merchandising Frigidaire in New York City for five years. Five years ago the directors of a large corporation decided that their machine was sufficiently perfected, that they could go out and offer it with confidence and satisfaction to customers, but for three of those five years it was awfully hard plugging. But two years ago next April the public suddenly awakened to the fact that the thing had been perfected, and it may be interesting to know that some of the people who are now pushing this proposition the hardest were among the slowest to accept and recognize the fact that it had been perfected. They had had so many unfortunate experiences with some of the earlier machines that many were skeptical about the thing having been brought to a state of practical perfection.

"We are going to see a great growth in Frigidaire this year. In 1925 advertising of electrical refrigeration companies was spasmodic, a "hit or miss" proposition, without definite plan or policy. Last year, when we were organized, we had a definite plan from the advertising viewpoint, and I think there is recognized already the different attitude—the different spirit underneath the whole thing. There was a plan; there was a method; there was a purpose in back of it all.

Good Results Obtained From Advertising Last Year.

"Our results from advertising last year were most satisfactory. I can state *that* without qualification of any kind. You of *The Times* staff can take a full measure of satisfaction from that, because *The Times* was the very backbone of our advertising last year. I hope it will be this year. We are planning a much increased expenditure for advertising purposes this year, and we mean to broaden our application of the advertising principle.

"You will find a great deal more advertising of electrical refrigeration, not only by an established company like Frigidaire, but by a great many new companies coming on the market.

Automobile Experience Not Always Applicable to Electric Refrigeration.

"There have been a number of men with automobile manufacturing and sales experience coming into this industry. Many of these men have had sound experience in the automobile field, but they do not yet realize that that does not necessarily fit them for manufacturing or selling electrical refrigerators. In fact, the reverse may be true.

"The public attitude toward electrical refrigeration and toward automobiles is an entirely different thing. Even though there has been a fine increase in electrical refrigerators the public yet does not come in and buy them; you have to go out and create the demand; you have to go out and show how they can be used; you have to employ special methods which require some pressure in back of it. A great many people think that all you to do is to make this thing and it sells itself. They have failed, because they did not understand how or in what manner they must be sold. Even though you sell the machine, a lot of men forget this fundamental point—that, unless you can install that machine in the man's home so that it will function correctly, the customer is dissatisfied and a kicker. You may make thousands of machines a month, but unless you can install those machines you create a thousand dissatisfied customers. The public attitude seems to be: 'We will wait a reasonable time for it, but not too long, and if it *is* too long we become a nice, healthy kicker.

Public Expects Prompt Service.

"The neck of the bottle is the installation or the service department of any organization. I emphasize this, because so far as Frigidaire is concerned we have the finest service equipment in the United States, barring none, for the maintenance and servicing of electric refrigerators. We spend a tremendous amount of money on that, because that is the backbone of satisfaction to a customer. Suddenly something goes wrong on a machine you have sold to a customer, and if you don't repair it the same day, he says the service is 'rotten.' This requires having a large service department to take care of the thing immediately. You and I can say that it's unreasonable, but that is just what the public expects. There are a great many problems in this so-called 'service' proposition. The reason I say this is because some of you men will see some electric refrigerator advertising appearing in the New York papers in 1927, and then you'll say 'I never see it any more—I wonder why it failed.' I am just giving you some of the reasons why.

Must Sell the Public on the Idea and Real Need of Refrigeration.

"As a last word, I might say that the great problem today is to sell the public the main idea and the real need for refrigeration. And that is why I am glad to come here this morning; why I am glad to accept any opportunity to talk about this problem and this situation, driving home to the American public the importance of food, the correct keeping of food, the proper cooking of food, and the best serving of it. Apropos of this a few weeks ago '*Life*' printed a comic picture of a couple getting ready to dine. The young wife said, 'Let's have a home-cooked meal tonight, John. Go out to the delicatessen and get some things to eat.'

"This food problem strikes at the very foundation of home life and family life. You can no more imagine home life unless it's built up around the kitchen and the dining room table than you can imagine an automobile without a motor. We can say all we want, but the French have developed the art of eating to a point that is not excelled anywhere. They value the thing, they appreciate it, but this country, being a young country, has not yet come up to it.

Ice Companies Should Help Put the Idea Across.

"We are being taught in this country the fact that food must be properly kept, and the ice companies should join with us in putting that idea across. Some of the bigger men in the ice business recognize that, so instead of fighting it, they are selling the public the idea that, whether by ice or mechanical refrigeration, the need for refrigerators is real. Show the public the need, indicate the health benefits of having better-kept food in the home by proper refrigeration—that is the great big problem before us.

"There are a tremendous number of people who don't take ice any time in the year. They take it only in the hot weather, forgetting that the kitchen is warmer in winter than in the summer. The thing for both the ice company and ourselves to do is to bring home to the public the idea of the real importance in refrigeration. As a result of that some people will buy more ice and other electric refrigeration, and both industries will gain."

SALESMANSHIP

S elling, not just talking,
A nd getting folks to buy;
L eading them to want something,
E xplaining how and why
S alesmanship is more than that,
M ore work and more fun, too;
A dvancing modern methods—
N ew ways, but tried and true—
S ervice given, willingly,
H ard work, a cheerful grin—
I t's making friends, for that is what
P uts you in line to win!

—*Direct Reflections.*

Card Parties in Frigidaire Display Room Prove Popular with Milwaukee Club Women

(See article on first page)

Will somebody please invent a cooker-freezer?

People are growing so used to expecting heat and cold from the same electric socket that a customer of a middle west public utility came in the other day and demanded a reimbursement of $2.45 to cover cost of materials used in a vain attempt to freeze ice cream in her electric cooker.

The cooker was a thermal jar arrangement and had been advertised as practical not only for keeping foods hot but for packing ice cream or other cold dishes on picnics, outings, etc. The enthusiastic purchaser immediately mixed up a batch of ice cream, poured it into the cooker, turned on the current—and got a quantity of hot cooked custard. She was directed to the electric refrigeration demonstration for a practical lesson in freezing foods.

Permanent Exhibit Pays

(*Continued from page 1, column 1*)

decorated with nuts and candied cherries—like a 45c sundae at a college soda fountain—will keep its appetizing complexion for from two to three weeks on the display floor in summertime.

To make these synthetic dishes, soap flakes and a little water are beaten stiff with the electric egg beater. Then coloring matter is added and the mixture is arranged in attractive sherbet or mousse glasses. For a gorgeous birthday cake, you merely invert a large tin cake pan from the "five-and-ten" and ice it generously with plain white soapsuds. Then decorate with pink soapsuds pressed through a pastry tube, and add pink candles. A small oval shaped dish inverted and covered with orange flavored soapsuds, decorated with white soapsuds, makes a delectable looking jellied pudding.

None of these dishes will "spoil," of course. Neither can any of them be eaten, but the demonstrator always has a freezing tray filled with real mousse or sherbet of some kind, so that the insistent prospect may have a sample. The casual customer who comes up and looks at an attractive display of frozen dishes won't plunge a spoon into them, if no spoon is in sight. The dishes look "too pretty to eat," and it's good they do!

In giving you directions for making these synthetic viands, it will be necessary for us to mention two or three trademarked products, as Miss Spengler has found, after considerable testing, that these brands are the most satisfactory. Use Federal Soap Flakes or Lux, allowing three parts soap flakes to one part water. Mix well to dissolve the flakes, then beat until stiff and dry with the electric egg beater. Color with Dr. Price's fruit flavoring extracts, which come in liquid form like vanilla flavoring. Whipped cream and meringue for pie crusts should be plain white suds, of course. Cakes, pie (made with real crust) and jellied puddings should be used to decorate the shelves of the refrigerator. Mousses and other cream desserts in fancy glasses may be displayed on the table in the booth, as these are supposed to have been prepared in the freezing chamber of the refrigerator. A local caterer will prepare these dishes for you and decorate them elaborately, if you will give her these directions. If you have a new assortment made up once every month or six weeks, the cost will be small and your electric refrigeration display constantly supplied.

Womenfolk are becoming increasingly interested in what the electric refrigerator will do in helping them to vary the daily menu. Put more emphasis on this phase of your demonstration and selling talk, and watch sales improve.

Earnings of Ice Company in Cleveland Not Affected by Electric Refrigeration

Adverse effects of electric refrigeration competition are not discernible, officers say, in the annual statement of the City Ice & Fuel Co., reported in the *Cleveland Plain Dealer*, February 5. Net income after all charges for year ended December 31, 1926, was $3,011,449, equivalent to $3.37 a share on 892,000 shares of common stock, against $2,685,510 or $3 01 the year before.

This showing was made in spite of a deficit in temperature in the cities the company operates ranging in total from 600 to 800 degrees compared with 1925. Sales of ice and coal last year totaled 2,789,421 tons. The balance sheet shows the company to have $3,067,324 of working capital.

City Ice business in December and January was larger than in corresponding months last year. As only 14 per cent of its customers in Cleveland, Columbus and Cincinnati use ice throughout the year and more than 60 per cent use ice only three months in the year, this increase in the two months mentioned is significant, officials said. They expected the electric refrigeration competition would be felt more in winter than in summer.

Sales for 1926 totaled $16,200,387 against $14,952,248 a year ago. Reserves include $7,720,898 depreciation, $479,760 income tax, $213,814 insurance and $23,731 for unredeemed ice coupons.

Reads Every Item in Paper

E. L. Dunning, president of the Dunning Pump & Mfg. Co., Philadelphia, Pa., writes: "I read every item from front to back and think that it is extremely interesting to anyone who is at all interested in the field of refrigeration."

First Refrigeration News Bulletin Issued by N. E. L. A. Committee

Digest of Articles on Sales Experience Which Have Appeared in Various Publications During Last Six Months of 1926.

Bulletin No. 1, dated February 9, 1927, issued by the Refrigeration Committee, Commercial National Section, National Electric Light Association, 29 West 39th Street, New York, is reprinted in full below. H. E. Young, of the Northern States Power Co., Minneapolis, Minn., is chairman of the committee.

"Send Refrigerators Frosted to Customer's Premises"

July 15, 1926, issue of *Journal of Electricity* (Electrical West). Describes the system practiced by certain merchandisers in California of frosting the refrigeration unit before delivery, so that upon arrival of a refrigerator at a customer's home it is cold enough to be put into immediate use.

"Electric Refrigeration"

By William E. Clement, New Orleans Public Service, Inc., New Orleans, La. July, 1926, issue of *Electrical South*. The article is an abstract of an address before the Southwestern Division of the N. E. L. A. by an executive of the New Orleans Company, and contains brief and interesting suggestions as to how the idea of refrigeration and refrigerators can be sold. It also deals with the training of salesmen and the method of compensation.

"Opportunities for Small Ice Machines"

By C. C. Crawford, Portland Electric Power Co., Portland, Ore. August 7, 1926, issue of *Electrical World*. Article pointing out that enthusiasm for household electric refrigeration should not interfere with development of the desirable and profitable load of the small ice machines used in connection with ice cream cabinets, soda fountains, dairies, etc. Article includes table showing estimated monthly consumption from these sources.

"Gas and Electric News"

August, 1926, issue. Published by Rochester Gas & Electric Corporation, Rochester, N. Y. Practically entire issue devoted to electric refrigeration. Contains instructive articles submitted by General Electric Company, Electric Refrigeration Corporation; Servel Corporation, and other manufacturers, together with articles by individuals. The issue is well illustrated and shows what can be done by electric service companies in promoting electric refrigeration through house organs. Copies of the issue can be obtained by writing to publisher.

"Sampling. The Architect Sells Refrigerators"

August, 1926, issue of *Electrical Merchandising*. Article describes method of selling refrigerators through architects. Twenty-three refrigertors per month sold in Evanston, Ill., by selling architects the idea of electric refrigeration.

"Domestic Refrigeration and the Ice Companies' Load"

By G. M. Dwelley, sales manager Kelvinator Corporation, Detroit, Mich. September 4, 1926, issue of *Electrical World*. A discussion of the relations between the electric service company and the ice manufacturers in developing refrigeration. The obligation to the ice company, heavy demand consumers, stockholders, and economics of the situation fully discussed.

"Sells 23 Electric Refrigerators In Two Weeks"

August, 1926, issue of *Electrical Merchandising*. Article tells story of a carefully thought-out program for selling electric refrigeration by the New York & Queens Electric Light & Power Co. Letters, with return cards to customers, backed by special display used most effectively.

"What the Public Wants to Know About Electric Refrigeration"

September 11, 1926, issue of *Electric Refrigeration News*. The article contains a number of interviews made by investigators who called at many homes in suburban Chicago and asked the question, "What do you want to know about electric refrigeration?" Many of the questions asked are amusing, but all are interesting and valuable to advertising and sales executives. The report of the interviews is continued in the October and December issues.

"The Effect of Seasonal Business On Total Gross Sales"

August, 1926, issue of *Electrical Merchandising*. A chart showing the stabilizing influence of sales of electrical equipment whose peak demands fall on different months, such as refrigerators and oil burners.

"Policies and Methods that Sell Refrigerators"

By L. R. Parker, general manager United Appliance Co., Jackson, Mich. A list of the policies and methods followed by Mr. Parker in selling electric refrigeration. The article discusses the importance of the business qualifications of the salesmen and proper installation and servicing. Article appeared in September 18, 1926, issue of *Electrical World*.

"Electric Refrigeration. Help It Help You"

By G. E. Durban, Delco-Light Co., Dayton, Ohio. September, 1926, issue of *Electric Light and Power*. An abstract of an address before East Central Geographic Division, N. E. L. A., July, 1926, giving brief history of refrigeration. It also discusses field for refrigeration and suggests programs for sales campaigns. Advocates special departments for refrigeration sales.

"Electrical Refrigeration Campaign Sells 1488 Units In 30 Days"

By L. E. Moffett. September, 1926, issue of *Electric Merchandising*. Article reporting results of a refrigerator campaign, embracing nine cities, by the Ohio Public Service Company. The article is accompanied by instructive charts and graphs analyzing results of campaign.

"Setting a Quota for Year Round Refrigerator Sales"

September, 1926, issue of *Electrical South*. Article setting forth program of the Tennessee Electric Power Co. for 1926, value of sales of merchandising equipment to average home in excess of the sales of electric current. Electric refrigeration quota more than doubled over 1925.

"Electric Refrigerator Merchandising—What the Dealer Wants to Know"

September, 1926, issue of *Electrical Record*. Article outlining some of the considerations requiring examination before dealer enters a new sales field; efficiency of personnel, merits of product, performance and servicing.

"Status of Electric Refrigeration"

October 30, 1926, issue of *Electrical World*. Results of a nation-wide survey, which analyzes existing production, selling and servicing practice, supplemented by data from 154 localities on more than 50 topics. This article discusses the number of units sold in 1926, the utility executive's opinion, relations with the ice industry, makes of refrigerators sold, selling methods used, concentration of salesmen, typical refrigeration departments of utility companies handling service, relations among local outlets, servicing experiences, most frequent causes of complaint, remote or self-contained units, general situation with respect to past conditions, energy consumption, market possibilities and sales estimates, and ends with thirty-two conclusions.

"Electric Refrigeration Looks Good to Central Stations"

By Alex. Dow, president the Detroit Edison Co., Detroit, Mich. October 6, 1926, issue of ELECTRIC REFRIGERATION NEWS. The article is a report of an address made by Mr. Dow at the Waldenwoods meeting of the Electric Refrigeration Council, September 12. "Electric refrigeration is the best load builder since the electric flat-iron came on the market," Mr. Dow stated.

"Direct Letter, Offering Booklet, Brings Many Replies and Sales"

October 6, 1926, issue of ELECTRIC REFRIGERATION NEWS. The article tells of good results obtained from direct mail campaign used by New York & Queens Electric Light & Power Company during past year. Letter offering copy of boookket, "Dainties to a Queen's Taste" brought 10 per cent return in replies.

"Ten Live Leads a Week from Refrigeration School"

October, 1926, issue of *Electrical Merchandising*. Article tells how Fred Foersterling and Associates, Inc., 608 Main St., Peoria, Ill., have succeeded in getting from 30 to 50 women to attend weekly refrigeration class. The electric range cooking school idea applies to refrigeration with great success.

"Pioneering Electric Refrigeration"

October, 1926, issue of *Electrical South*. Article describing merchandising practices used in introducing electrical refrigeration in Athens, Ga., by the Athens Railway & Electric Co., also plans for follow-up.

"Utility Sells Refrigerators Valued at $4,226 Per Day"

November 27, 1926, issue of *Electrical World*. One of the most successful campaigns for the sale of electric refrigerators ever conducted in the South completed by the sales department of the Georgia Railway & Power Company. During the six weeks of the campaign the sales amounted to $154,353. One of the features of the campaign was the assurance given customers of proper service to all electric refrigerators sold by the company, the promise being made that a service man would call as regularly as the meter reader, and more often if needed.

"Electric Refrigerator Users Shown by Map"

November 13, 1926, issue of *Electrical World*. Article describing novel and effective method of stimulating interest in the rates of electric refrigeration adopted by the Ohio Public Service Co. A window display utilizing a map marked with colored thumb tacks, indicating place and character of installation.

"Cleveland's Electric Refrigerator Campaign"

October, 1926, issue of *Electrical Record*. The Cleveland Electric Illuminating Co. united with local distributors in $15,000 educational campaign with marked success. The campaign was tied in with the market development program of the Society for Electrical Development.

"Electric Refrigeration"

Submitted by Delco-Light Co., Dayton, Ohio. November, 1926, issue of *Ballard's Magazine*. How many people know how an electrical refrigerating machine works? This article tells the story in an easily understandable manner.

" 'So Big' Electrical Appliances In a Christmas Gift Setting"

By Ernest A. Dench. November 20, 1926, issue of ELECTRIC REFRIGERATION NEWS. The article is a novel suggestion for stimulating Christmas sales by applying the Edna Ferber idea of "So Big" and featuring it as a gift package.

"Progress in Apartment Electrification Made by Portland Utilities"

December 15, 1926, issue of *Journal of Electricity* (Electrical West). Figures compiled by a Portland (Ore.) utility company show that electric refrigeration has been installed in thirty-nine of the sixty-six new apartment houses built in Portland during the last nine months of 1926, 63 per cent of the 856 apartments being thus equipped.

"Showing Customers Monthly Costs of Refrigeration"

December 4, 1926, issue of *Electrical World*. Article describing plan to overcome the public's criticism that they do not know how much their refrigerators are costing them, and also to collect valuable data. Gas and electric company, each month, sends out with bills slips which show just what each individual refrigerator is costing the owner. This has been found very effective in convincing customers of the low cost of electric refrigeration.

(*Continued on page 8, column 1*)

ELECTRIC REFRIGERATION NEWS

The Business Newspaper of the Electric Refrigeration Industry

PUBLISHED EVERY TWO WEEKS BY
BUSINESS NEWS PUBLISHING CO.
409 East Jefferson Avenue, Detroit, Michigan
Telephone: Cadillac 4445

Subscription price: 75 cents per year; two years for $1.00
Foreign subscription price $1.00 per year. Advertising Rates on Request

F. M. COCKRELL, *Editor* — GEORGE H. HOWELL, *Business Manager*
H. A. DELASHMUTT, *Managing Editor* — F. B. RILEY, *Technical Editor*
R. W. T. RICKER, *Contributing Editor*

FEBRUARY 16, 1927

Make Your Store Display *Talk*

ELECTRIC refrigerators have been known to sing, some have an exasperating habit of humming, but few of them have been trained to talk. Those which keep quiet in the presence of company, like good children, get all the praise. If, perchance, one unexpectedly coughs and heaves a sigh, indicating some disturbance in its innards, the customer is likely to look startled and back away. Shoppers who have a habit of looking into things for themselves are often surprised when they take liberties with an electric refrigerator. Apparently lifeless, it suddenly shakes itself and acts agitated as if in protest.

The public has become accustomed to the spectacular effects which may be produced by electrical means, and expects them. The vacuum cleaner emulates the magician as it makes the white powder and lint disappear from the oriental rug before the eyes of the prospect. The washing machine churns its foamy suds while lights play on the millions of little bubbles and reflect the changing colors of the spectrum. The ironing machine turns wrinkled towels into smooth ones, the sewing machine gathers and ruffles, the fan catches the approaching customer with its cooling breeze.

The Silent Electric Refrigerator

The electric refrigerator alone stands silently and coldly aloof. It is self-operating—not even a button to press. This outstanding feature, automatic operation, puts the demonstrator at a disadvantage. It is difficult to put the device through its paces for the benefit of the interested prospect. Its silent efficiency, like that of President Coolidge, does not provoke outbursts of enthusiasm.

Even the glittering, white frosted tanks and serpentine coils spelling out the name of the maker, have the disadvantage of giving incorrect ideas about the operation of the machine. The white frost *looks* cold, and it is with some difficulty that the customer is led to understand the necessity for "de-frosting." The ideal refrigerator, it appears, is one which does nothing whatever to attract attention.

Why Not Use Silent Salesmen?

The problem, therefore, is that of capitalizing upon the silence and immobility of the electric refrigerator and using these characteristics as a sales appeal. All of which suggests the "silent salesman," namely, printed messages, pictures, diagrams, cards, tags and labels that tell the story.

Silent salesmanship has been developed to a high degree of effectiveness by the window display artists connected with large retail stores. There a careful check is made of results in the form of daily sales directly attributable to the window appeal. Smaller merchants, particularly those more gifted in mechanics than in merchandising, have a tendency to neglect or overlook the importance of their windows as a selling asset.

The Power of the Printed Word

The opportunities for silent salesmanship *inside* the store are even more frequently neglected. Unless a trained salesman is immediately available to answer inquiries, many interested shoppers are likely to pass on with their questions unanswered. Carefully prepared signs, explaining the service of the machine and pointing out its various features, will attract and hold the interest of the prospect.

Furthermore, statements about food protection and the operation of the electric refrigerator, put down "in black and white," add strength to the sales talk. People are more inclined to believe what they *read* than what they *hear*. There is also a saving in the time of the salesman. Part of his story is already told.

Let the refrigerator "tell its story" continuously to all who come within reading distance. Make your store display "talk."

At the Forks of the Road

A housewife bearing a burdensome load
Once stood at the forks of a weary road,
Vainly striving which way she should go,
That rest and comfort she, too, might know.

"I can take the Road-of-Wear-Yourself-Out"
And thereby gain comfort and rest, no doubt,
In another world, and be replaced
By another wife, perhaps in haste,"

She grimly said as she turned aside
From the Wear-Yourself-Out Road, rough and wide.
"Ah, here is the Road-of-Servants, too,
Perhaps for my purpose this road will do;

But they tell me peace and rest are not found
With clamoring servants always around.
Alack! Alas! It would almost seem
That peace and rest must remain a dream."

But, as she turned away in despair,
She spied a road inviting and fair,
A restful road full of comfort and cheer.
"Ah," she said, "I believe I'll turn in here."

And rest and comfort were her's from the day
She wisely chose the Electrical Way.

—Alice Crowell Hoffman.

Application of Heat Principles to the Refrigerating System

Previous Lessons of Service Course Dealing With Basic Principles and Scientific Laws are Now Reviewed and Their Practical Application Shown

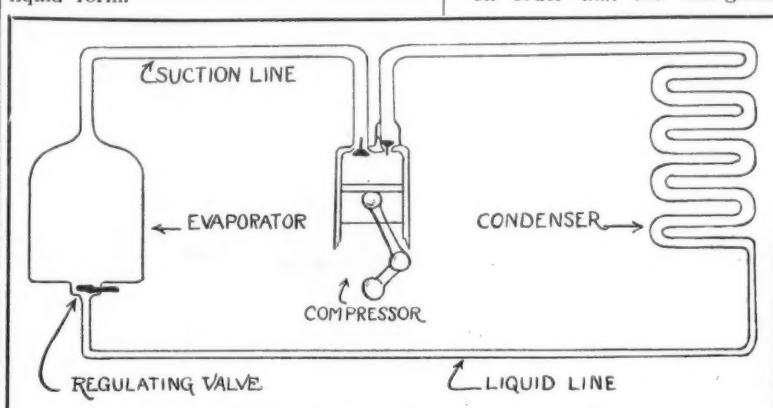
The sixth lesson of the service training course that is being published in ELECTRIC REFRIGERATION NEWS by courtesy of the Nizer Corporation, describes "The Refrigerating System." The subject headings for this lesson are as follows: "Pressure-Temperature Relations," "The Evaporator," "The Compressor," "The Condenser and Regulating Valve," "High and Low Pressure Parts," "Evaporator-Flooded System," "Evaporator Dry System," "The Brine Tank," "Operating Characteristics," "The Control."

LESSON 6
The Refrigerating System

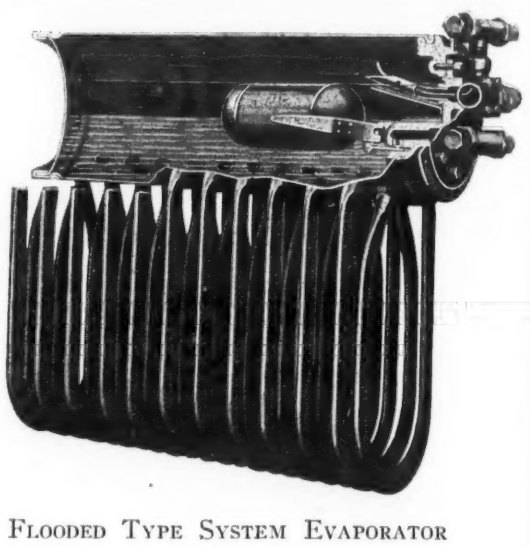
Review of Basic Principles

In the course of the last five lessons, we have devoted ourselves to a study of the general principles of heat and refrigeration. In this lesson we shall learn how these principles are applied in the refrigerating machine, but before passing on to this subject, let us review the outstanding principles of the preceding lessons.

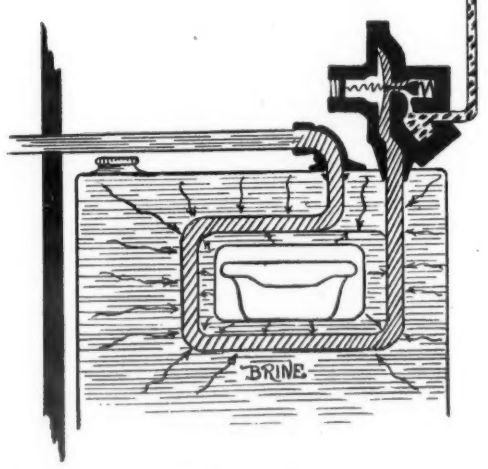
The first principle encountered was that the refrigeration in a mechanical refrigerating system is the result of the evaporation of a liquid commonly known as the refrigerant. Secondly, we learned that the temperature at which evaporation takes place depends upon the pressure to which the refrigerant is subjected. In other words, a liquid may be forced to evaporate and thus produce refrigeration at any temperature above that of its freezing point if the pressure to which it is subjected be made low enough. In the third place, we learned that in order to permit re-use of the refrigerant, it is necessary to condense the vapor and thus return it again to its liquid form.



(ABOVE) ELEMENTARY REFRIGERATING SYSTEM

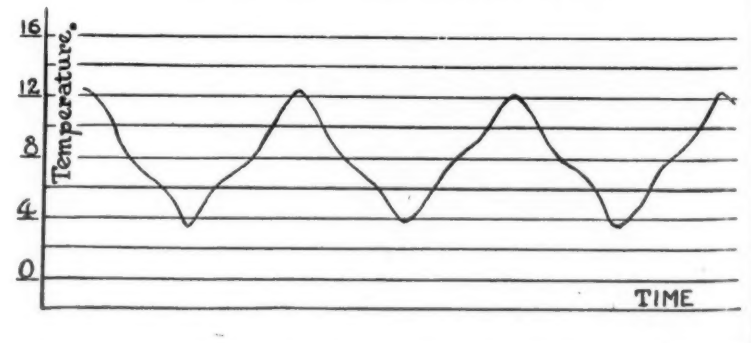


(BELOW) DRY TYPE SYSTEM EVAPORATOR IN BRINE TANK



(ABOVE) FLOODED TYPE SYSTEM EVAPORATOR

(BELOW) TIME-TEMPERATURE CHART



Pressure—Temperature Relations

To these principles already stated, we wish to add a fourth, namely: the pressure exerted by a confined saturated gas is always proportional to the temperature of the gas. This principle can be well illustrated by considering a closed drum partially filled with SO_2 liquid. That portion of the drum not occupied by liquid will of course be filled with SO_2 gas. The fact that the gas is in the presence of the liquid insures its being in a saturated condition. The pressure of the gas in this drum will depend upon the temperature. If the temperature is raised, the pressure will increase. If, on the other hand, the temperature be reduced, the pressure will also be reduced.

In the case of SO_2, it is possible to tell exactly what pressure will result from a given temperature, for, in all such cases, the pressure in the vessel will be found to be the pressure given by the vapor pressure curve studied in Lesson No. 4. This same fact holds true for all other refrigerants, it being necessary, of course, to use the vapor pressure curve for the refrigerant under consideration.

The Evaporator

Since refrigeration is based upon evaporation, the first requisite of the refrigerating system is a chamber or space in which this evaporation may take place. This very important unit of the system is usually called the evaporator. Evaporators are made in many different shapes and sizes, but all may be placed in one of two classes, depending upon whether they are used in the dry or flooded type of refrigerating system.

The Compressor

Since evaporation of the refrigerant is produced by a reduction of the pressure to which it is subjected, the second necessary unit in the refrigerating system is the compressor by which the low pressure in the evaporator is produced and maintained. In this connection, the compressor acts like a suction pump. The line by which the evaporator is connected to the compressor is called the suction line.

In nearly all cases, the compressor of the refrigerating system is of the reciprocating type, having either one or two cylinders. The rotary type of compressor occasionally will be encountered, but its use is largely limited to systems using low pressure refrigerants such as Ethyl Chloride. There are also to be found compressors in which mercury in combination with centrifugal force is used to supply the pumping action. These, however, are not common.

The Condenser and Regulating Valve

In order that the refrigerant may be used again, it is necessary to reconvert it to its liquid form. This, we know, is done by the application of pressure in conjunction with cooling. It is necessary to supply the cooling because when the gas is liquified it gives out all the heat that it previously removed from the evaporator and, unless this heat is carried away, the temperature of the condenser will rise so high as to prevent further condensation of the refrigerant, and so stop the operation of the system.

That portion of the machine in which the liquifying of the refrigerant takes place is known as the condenser. The pressure necessary for condensation is, of course, supplied by the compressor and the cooling either by air or water. Although the condensation of the gas results in its taking up a great deal less space than it occupied when in the vapor form, it must be remembered that this reduction of volume is not accompanied by a corresponding reduction in pressure. In other words, the liquid that is formed in the condenser is at the same high pressure as the uncondensed gas as it is delivered from the cylinder of the compressor itself. The liquid from the condenser is returned by way of the liquid line to the evaporator, but, because of its high pressure, it is necessary to place some sort of valve between the evaporator and the condenser. In the flooded system this valve is known as the float valve, while in the dry or expansion system it is called the expansion valve. The valve leading to the evaporator, whether it be of the float or expansion type, is entirely automatic in its operation and permits the liquid from the condenser to flow to the evaporator only as it is needed. Following is a sketch illustrating the units of which we have been speaking.

High and Low Pressure Parts

It is common when describing it to divide the refrigerating system into two main divisions called respectively the high pressure side and the low pressure side. This division is natural because there is so great a difference between the pressures found in the two divisions of the machine. All parts subjected to the high pressure are included in the high side. Similarly, all those parts confining the refrigerant when it is under low pressure are parts of the low pressure side.

The low pressure side always includes the evaporator, suction line, and compressor crankcase, together with any auxiliary parts connected to them. The high pressure side is made up of the condenser, receiver, if there is one, and liquid line.

The high pressure side and the low pressure side connect to each other at each end and thus form the complete circuit around which the refrigerant is required to pass. The division between the high and low side is the float or expansion valve at one end and the exhaust or discharge valve at the other. It is highly important that these valves function properly in order to prevent the high pressure from forcing itself into the low pressure region.

Evaporator—Flooded System

Evaporators are made either in the flooded or dry types. The flooded type evaporator is usually made in the form of a tank which is always partially filled with the liquid refrigerant. The refrigerant evaporates in this tank in just the same way that water evaporates or boils in a tea kettle. The suction line attaches to the upper part of the evaporator and removes the gas as rapidly as it is formed. Fresh liquid is supplied to the evaporator from the condenser from time to time, taking the place of that which has been evaporated. The valve which controls the admission of liquid to the evaporator is usually actuated by a float which opens the valve when the level of the liquid becomes low, and closes it again when the level is returned to its proper height.

The float is usually in the evaporator itself, but in one or two instances is built into an auxiliary chamber somewhere in the high pressure side of the system. The cut shows a representative type of evaporator of the flooded system with the float valve in the evaporator itself. The tubes on the evaporator are simply there to provide it with a larger heat absorbing surface. They have no other function.

Evaporator—Dry System

The evaporator in the expansion or dry type of system is usually in the form of a coil or pipe. At the entrance to the coil there is placed what is known as the expansion valve. The refrigerant is sprayed through this valve in the form of finely divided particles of liquid. The low pressure within the expansion coil then causes the complete evaporation of this liquid spray and, therefore, produces the desired refrigeration. The suction line to the compressor is attached to the other end of the expansion coil so that the dry system is in all respects, except the evaporator, the same as the flooded system.

The users of each of the systems are prone to attribute superiority to the particular system which they employ. In reality, there is little difference in their effectiveness as long as each system is operating correctly. The fact, however, that

(*Continued on page 7*)

Ice Man Tells How to Combat Electric Refrigeration Growth

Urges Ice Dealers Not to Handle Electric Machines

The problem of how much the electrical refrigerator is affecting the ice business was one that received a great deal of consideration at the annual meetings of the state and district ice dealers' associations that were held, for the most part, in November, December and January. One of the most interesting contributions on this subject, was the address made by W. K. Martin of Crawfordsville, at the meeting of the Indiana Ice Dealers' Association held at Indianapolis, December 8 and 9. The complete address was printed in the January issue of *"Ice and Refrigeration"* from which the following excerpts are taken:

"It has been advocated that, as there is forty per cent of our business as yet undeveloped, we must go after this forty per cent. I agree that this should be developed, but we will not get all of it, and after we have developed all we can of this, we have reached the saturation point of our business. Now, what is going to be the relative position of our industry after we have reached the saturation point?

"I feel that there will be a saturation point for the small machine, but while this point is being reached, and we are reaching the saturation point of our undeveloped forty per cent, what is going to be the ultimate status of our industry? They are skimming off the cream, are we to be satisfied with skimmed milk or do we want some of the cream left?

"I expect every man in the room has witnessed a football game. Gentlemen, right now as before, the big fellow and the little fellow in the ice business must join hands and work together, as one co-ordinated unit, if we expect to hold off the opposing team and not lose the game. Various ways of meeting this opposition have been suggested, and out of all of them we must sift them down and get the best we can. There is no question but what we must get to the public, and get the public thought directed in line with our industry.

"With this end in view, our National Association has established its Household Refrigerator Bureau in Household Economics. In order to further establish better public relations the National Association is endeavoring to raise a fund of $200,000 for that purpose.

"How many of you, like myself, pick up a magazine or pediodical, and the first thing turn the leaves over in the advertising space to see what the other fellow has to say? How many other men and housewives are doing the same thing, and how many are influenced by these advertisements to investigate, and maybe purchase, a small unit?

"Why not get them looking for our message, and what a message can be published. The 'Romance of Ice," and ice has a romance, such as hardly any other industry has, and if we give this to the public, they will read it, and we are strengthening our first line of defense.

"There is not a man here but can gain the opportunity of speaking before the clubs of his city—and what a world of information can be broadcast through this medium. But in all your efforts, confine yourself to facts, which can be proven and supported, for there is nothing that causes a loss of prestige more than to have to back down on your argument.

"But there is one thing in my humble judgment, that no ice man should do, and that is to take an agency for one of these small machines, sell them, and service them to his customers. Gentlemen, to my notion, the two will not mix. How can you talk machine to one customer and ice to another, when your arguments are directly opposite? How many of your ice customers are induced to buy small units on the strength of the argument by the other fellow, that they are a good thing, 'For the local ice man is also selling them,' and how many of these are there that you never know are contemplating a small unit until they are put in? In my opinion, it is handing over to the opponent all your ammunition, and you are giving him an axe to hit you in the head with. I know there are men who differ with me on this, but I cannot reconcile myself to handing over to the opposition an argument and an advertisement which will be one of the biggest assets in his selling campaign."

"HELLO, CENTRAL, GIVE ME LONDON"—BIECHLER

Frigidaire President Enthusiastic About Business Possibilities of New Trans-Atlantic Telephone

Commercial trans-Atlantic telephone communication was established last week between Ohio and England, and calls from various points in the State were relayed by radio to London. One of the first persons to make use of this service was E. G. Biechler, president and general manager of Frigidaire Corporation, Dayton, Ohio.

Mr. Biechler, together with J. B. Clark, comptroller; J. C. Shannon, manager of the foreign department; H. H. Hardy, assistant foreign manager; B. B. Geyer, of the Geyer Advertising Company, Dayton, and several of the Dayton newspaper men, talked for five minutes with H. L McGurk, London branch manager for the Frigidaire Corporation. All of Frigidaire officials and newspaper men made themselves heard distinctly and in turn heard everything Mr. McGurk said in reply.

The new method of trans-Atlantic communication offers great business possibilities, Mr. Biechler predicted, and when interviewed by the *Dayton Herald* stated: "The Frigidaire Company expects to make extensive use of the quick means of communication in the immediate future. In from three to five minutes over the telephone transactions can be completed that would require perhaps several days to consummate by cable. I think that it is a wonderful thing."

There was much jubilation among the group in Biechler's office when Mr. McGurk made the announcement over the telephone that the London office has doubled its sales in January.

The voice of Mr. Biechler, talking to his associate, was carried a distance of 4,000 miles over the water by means of radio and across the land by wire.

A Magical Device

My 'lectric refrigerator
Is a magical dev*ice;*
Words I use to talk about it
Turn at once right into *ice.*

From the moment that I spied it
It most surely did ent*ice,*
And now that I have attained it,
All my needs it doth suff*ice.*

To deny myself of something
That's so handy, clean and n*ice,*
When I can, forsooth, afford it,
Would indeed be avar*ice.*

Nor would I forego its serv*ice*
Even if I lacked the pr*ice,*
Since I know that it is worthy
Of most any sacrif*ice.*

—Alice-Crowell Hoffman.

NEW BOOKLETS AND LEAFLETS

Welsbach

The Welsbach Company, Gloucester City, N. J., has recently issued a two-color folder, 6 x 9, entitled "A New and Better Refrigeration Service."

A 5 x 8 folder, with enclosure entitled "Electric Refrigeration," has been issued by the same company.

Ice-O-Matic

The Ice-O-Matic Refrigeration Co., Limited, Windsor, Ont., Canada, has issued a two-color, 24-page booklet entitled "Cold Facts and Figures." Besides giving a description of Ice-O-Matic machine and the Alcoid refrigerant used, it contains a brief outline of the Canadian market possibilities.

Two broadsides, 12 x 20, have been issued entitled "Now the Safe and Better Refrigeration for Your Home" and "Simple and Inexpensive Refrigeration."

Survey of Electric Refrigeration Market in Philadelphia District

A Survey of the Market and An Analysis of Newspaper Advertising and Distribution Methods of the Various Companies Represented

Compiled by Research Division, Public Ledger, Philadelphia

Electric refrigerators for household purposes were first introduced in Philadelphia about eleven years ago. The machines were then in an experimental stage and no great effort was made to sell them, either by manufacturers or dealers. By the end of 1924 mechanical features were so far improved that the public interest was awakened and more machines were sold in 1925 than in all of the preceding years.

Most of the manufacturers doing business here were oversold in 1925. With the increase in the number of manufacturers (there are now 106 manufacturers in the United States making machines), and the increase in facilities by some of the older companies, the supply was equal to the demand, although total sales were approximately 400 per cent higher in 1926 than in 1925.

The annual sales record of one of the leading dealers in this line is: Prior to 1924, 20; 1924, 50; 1925, 162; 1926, 500.

One company doing business here has made provisions for a sale of 40,000 household and commercial machines during 1927 in Metropolitan Philadelphia, which includes the suburban territory within a 30-mile radius.

Population and Dwellings

The estimated population of Philadelphia, as of January 1, 1927, is:

Philadelphia	2,021,652
Population 30-mile suburban radius	1,345,000
Population Metropolitan Philadelphia	3,366,652

The total number of dwellings in Philadelphia on January 1, 1927, was 427,411. Of this number, approximately 250,000 are owned by those living in them, which gives the city a unique position among the great cities of the world in the proportion of its home owning inhabitants.

There are no accurate figures for the suburban territory. Reliable estimates indicate, however, that within a 30-mile radius of the city limits of Philadelphia there are 284,000 buildings, residential and commercial. There are, therefore, over 600,000 dwellings in Metropolitan Philadelphia. It is estimated that 7,500 dwellings will be erected in the city and approximately 5,000 in the suburbs during 1927.

Extent Electric Service is Used

On January 1, 1927, we had in the city, exclusive of the suburbs:

356,438	domestic or household electric meters
110,347	commercial electric meters
466,785	total electric meters

The suburbs have approximately:

135,000	domestic electric meters, and
25,000	commercial electric meters
160,000	total electric meters

In Metropolitan Philadelphia electric meters are being installed at the rate of approximately 5,500 per month. The approximate number of household electric refrigerating installations (units) on January 1, 1927, was as follows:

Philadelphia	13,046
Suburbs	9,250
Metropolitan Philadelphia.	22,296

The household installations in the city of Philadelphia represent 2.79 per cent of the electric current users as compared with the 2.41 per cent average for the nation.

Location of High Class Residences

The type of homes where installations are made are those costing upward of $10,000, and where there is also an income of $3,500. In Metropolitan Philadelphia we have approximately 100,000 homes of this class.

The strictly high-class residential districts in the city of Philadelphia are Germantown, Mt. Airy, Chestnut Hill, Oak Lane, the greater part of West Philadelphia, the upper part of Frankford, Logan, and in the central part of Philadelphia, the territory extending from Broad street to Twenty-third street, between Chestnut street and Pine street.

The strictly high-class suburban residential towns within a radius of 20 miles are Elkins Park, Jenkintown, Glenside, Overbrook, Merion, Narberth, Wynnewood, Ardmore, Haverford, Bryn Mawr, Devon, Strafford, Villa Nova, Wayne, Drexel Hill, Paoli, Lansdowne, Swarthmore, Media, Ridley Park, Radnor, Merchantville, N. J.; Moorestown, N. J.; Haddonfield, N. J.; Haddon Heights, N. J.; Palmyra, N. J.; Riverton, N. J.; and Collingswood, N. J.

The following suburban towns are of a mixed industrial and residential character, but they contain many fine residences: Norristown, Chester, West Chester, Conshohocken, Bristol, Camden, N. J., and Trenton, N. J.

The bank deposits in Metropolitan Philadelphia, per capita, are $491.00; savings deposits per capita, $315.00; building and loan association assets per capita, $249.00; estimated true value of real estate per capita in Philadelphia is $2,300.00.

Average Temperatures and Humidity

Temperature and humidity tables for Philadelphia during 1926:

	Average Temp., °F.	Average Humidity, °F.	Average Water Temp. at Filter, °F.
Jan.	34	68	37
Feb.	34	71	37
Mar.	39	61	42+
Apr.	50	60	54
May	63	58	65
June	68	70	75
July	76	76	79
Aug.	75	78	79
Sept.	68	79	74
Oct.	57	75	63
Nov.	46	78	51
Dec.	32	78	40

An official of the Department of Public Health of the City of Philadelphia, when interviewed recently on the value of electric refrigeration, stated that it acted as a defense against disease. Cold retards the growth of bacteria in food and does not give such germs as typhoid, diphtheria, cold, influenza, etc., an opportunity to develop. This is particularly applicable to milk and meat, where deterioration is rapid and where it may exist even where there is no apparent sign of spoilage. Maximum sanitary efficiency is obtained where a clean food container is cooled by dry, cold air, which is kept in circulation, such as is found in the leading electric refrigerators.

Food Spoilage Due to Lack of Refrigeration

According to the report of the Department of Health for 1926, failure to use proper refrigeration resulted in the following kinds and quantities of foods being condemned for the year ending December 31, 1926:

Beef	56,976 pounds
Pork	10,580 pounds
Mutton	2,105 pounds
Poultry	110,191 pounds
Game	6,489 pounds
Fish	815,289 pounds
Shellfish	82,557 pounds

The electric refrigerator in Philadelphia has had its greatest appeal among the intelligent classes. Advertising has been the most effective means of acquainting the public with the value of electric refrigeration. Advertising lineage figures for Philadelphia for 1926 were as follows:

Summary of Newspaper Advertising Lineage Totals

	Public Ledger	Inquirer	Record	Bulletin	Evening Ledger
Iroquois	680	200	...	1200	680
Absopure	2850	2350	2000	4196	2850
Champion	1640	575	180	...	1640
Fedco	300	...	...	300	300
Frigidaire	16936	15021	23300	19716	14635
Ice Maid	4752	...	...	1400	4752
Kelvinator	1160	1640	1425	9420	1160
Servel	...	...	...	2375	...
Superior	...	...	...	1188	...
Zerozone	...	...	...	2320	...
Totals	28318	19786	26905	42116	26017

The company having the largest clientele of electric appliance users in the city gets over 60 per cent of its sales for electric refrigerators through newspaper advertising.

The monthly percentage of electric refrigerator sales is distributed as follows:

Jan.	1%	July	6%
Feb.	2%	Aug.	5½%
Mar.	10%	Sept.	4%
Apr.	20%	Oct.	3½%
May	25%	Nov.	2%
June	21%	Dec.	1%

In Philadelphia fourteen dealers recommend remote installation; three have no definite idea on the subject. One recommended self-contained installation.

The number of service calls is diminishing with the period of manufacture. One of the oldest companies doing business here has a record of less than one service call per machine in use in 1926. On new installations, the installing and inspection calls were not counted during the first three months of operation.

Fourteen companies sell on time, if desired. One sells for cash only, three have had no experience, and one is unrepresented at the present time. Of the fourteen companies selling on time, the percentage of time sales varies from 5 per cent to 90 per cent. Time payments extend over a period uf 12 to 24 months. The initial payment varies from 10 per cent to 25 per cent.

There is a tendency toward metal boxes in Philadelphia.

Cost of Electric Current

The rate of the Philadelphia Electric Company on current is as follws:

	Per K.-W. Hr.
The first 12 k.-w. hrs., per month.	8c
The next 36 k.-w. hrs., per month	7c
The next 48 k.-w. hrs., per month	3c

Rate in excess of 48 k.-w. hours per month is 3c per k.-w. hour.

It is estimated that the average home of six rooms will use about 48 k.-w. hours per month for lighting purposes in the winter months. The annual amount of current used by electric refrigerators depends upon the type of box used and the manner of its use. It is estimated that the new type boxes now being made, with nine (9) cubic feet contents (over all) will consume an average of 60 k.-w. hours per month.

Machine and Manufacturer	Sold through	How sold	Box used
ABSOPURE General Necessities Corp., Detroit, Mich.	Distributor	To dealers and house to house	Alaska, Vogt, Reol
CHAMPION ELECTRO ELECTRIC ICER Champion Electric Co., St. Louis, Mo.	Distributor	To dealers and house to house	Seeger
COLDAK Coldak Corporation, New York, N. Y.	Factory Branch	To dealers and house to house	Alaska Seeger Reol
COPELAND Copelands Products, Inc., Detroit, Mich.	Factory Branch	To dealers and house to house	Seeger
ELECTRICE Belding-Hall Co., Belding, Mich.	Distributor	To dealers outside of Phila. House to House in Phila.	Belding-Hall
FRIGIDAIRE Frigidaire Corporation, Dayton, Ohio	Distributor	To dealers outside of Phila. House to house in Phila.	Frigidaire
FROSTIC Earnshaw Mfg. Co., Philadelphia, Pa.	Distributor	To dealers and house to house	Bohn
GENERAL ELECTRIC General Electric Co., Schenectady, N. Y.	Distributor	To dealers and house to house	Seeger Bohn
ICE MAID The Lamson Co., Syrcause, N. Y.	Factory branch	To dealers and house to house	Lamson
IDEAL Refrigerating Utilities Corp., Philadelphia, Pa.	Factory	To dealers and house to house	Rhinelander
IROQUOIS Barber Asphalt Co., Philadelphia, Pa.	Distributor	To dealers and house to house	Iroquois Seeger Bohn
KELVINATOR Kelvinator Corp., Detroit, Mich	Distributor	To dealers and house to house	Jewett Leonard
LIPMAN General Ref. Co., Beloit, Wis.	Distributor	To dealers and house to house	Any Box
RICE Rice Products, Inc., Detroit, Mich.	Distributor		
SANAT Sanat Refrigerating Co., New York, N. Y.	Distributor	To dealers and house to house	Seeger Gurney
SERVEL The Servel Corp., New York, N. Y.	Distributor	Dealers and direct	Servel Bohn
UNIVERSAL Universal Ice Machine Co. Detroit, Mich.			
WELSBACH Welsbach Company, Gloucester City, N. J.	Distributor	Dealers and direct	Welsbach
ZEROZONE Iron Mountain Co., Chicago, Ill.	Distributor	Dealers	Seeger

Gas Companies Showing Keen Interest in Absorption Machine

Historical Development Outlined—Results Unsuccessful Until Recently—Characteristics and Operating Cost Given.

The following extracts from a talk by F. E. Sellman, given before the New England Section of the American Gas Association in Boston, December 10, 1926, indicate the efforts being made to educate the gas utilities to the possibilities of developing a market for the gas operated refrigerator.

"For many years the gas engineer has been looking forward with keen anticipation to the arrival of a salable gas-fired refrigerator. Many gas engineers have referred to the gas-fired refrigerator as the most desirable, undeveloped, single appliance in the gas industry. This type of load is highly desirable, as it would balance to a great extent the house heating load of the winter months.

"Of late years there has been considerable talk of gas-fired refrigerators, but apparently very little has been accomplished, as we can pick up any magazine at random and find numerous mentions of various electrically operated refrigerating machines, but no mention of a gas-fired refrigerator.

Eight Machines Failed to Meet Requirements

"This does not mean that the gas refrigerating machine has been at a standstill, for in looking over test reports of gas-fired refrigerators, we find that one individual gas company has in the past thirteen years tested eight distinct gas-fired refrigerating machines. There is, however, one outstanding feature common to all test reports, and that is the last sentence, which reads, "not approved."

"My curiosity was immediately aroused as to what type of machine was covered in these tests, and I found that in every instance the test covered that of the intermittent type of refrigerating machine. The intermittent machine of necessity required numerous valves and moving parts, and such machines, unless equipped with exceptionally large brine tanks, are far from continuous in their refrigerating effect, and as a consequence do not maintain constant box temperatures.

"The public and public service utilities are quick to recognize a finished salable article, and to discover the relative merits of one system over another. Why, then, have these numerous gas-fired refrigerating machines which have been invented in the past decade failed to be accepted? The answer is readily discernible in that the various machines failed to conform to the fundamental requirements of a properly constructed gas-fired refrigerator. We might enumerate these points as follows:

1st—The machine must be absolutely safe under all conditions that may develop.

2nd—The machine should be continuous in refrigerating effect and free from manual supervision.

3rd—Any desired ice box temperature should be obtainable.

4th—The desired temperature should be maintained uniformly within a 5-degree variation.

5th—The machine should be of such design and dimensions that no more floor space is required than with the present type electrically operated refrigerating machine.

6th—The necessity for maintenance and repair should be at an absolute minimum.

7th—The operating cost should present economy over other types of refrigeration.

8th—First installation should be made as simple and as easily as possible.

"These eight machines which were tested all failed to meet several of the requirements listed above. In numerous instances these machines were so bulky and cumbersome that installations had to be made in the cellars. As ammonia was piped from one floor to another, a dangerous condition arose. There was a further disadvantage in that the installation had to be made in conformance with fire department regulations, resulting in outdoor vents, etc.

Development of the Absorption-Type Machine

"It therefore seems that a desirable type of machine for domestic use would be a continuous operating absorption machine, if such a machine were obtainable. The history of the continuous operating absorption machine is extremely interesting and may be traced back to at least 1860, when what is probably the first machine of this type was designed by a Frenchman named Carré.

"The Carré machine was built in great numbers, being used in breweries, distilleries, and similar plants where large amounts of exhaust steam were available, of which, at that time, no particular use was made.

"However, as steam technology further developed and afforded numerous uses for exhaust steam for other purposes, the employment of the absorption machine decreased. This decrease was further augmented by the higher efficiency of the newly developed compression systems. Mechanical difficulties also played a role with the small units which were used. The expansion valves were necessarily small, and the valve orifices were continually clogging with dirt; also, the pumps were a source of constant trouble, and had to be operated by auxiliary power, independent of the source of heat used in evaporating the aqua-ammonia.

"Thus there was created a demand for a small, continually operating, absorption machine, from which the defects of Carré's machine would be eliminated, this machine to have neither expansion valves nor pump, but to be capable of operation merely by a single supply of heat.

"In the year 1899 Geppert built such an apparatus. The apparatus of Geppert is based on the theoretically correct principle that a pressure drop requiring throttle valves and pump becomes unnecessary in a refrigerating system if the liquid ammonia meets with an inert gas in the evaporator in the presence of which the ammonia evaporates. The machine as designed was only partly successful, due to the difficulty of diffusing ammonia through a thick layer of inert gas.

"In another design invented by Geppert, he reduced the thickness of this layer and aided the evaporation by having the lower parts of fan blades dip into the liquid. In this way he was able to further separate the cold evaporator from the warm absorber, thereby reducing refrigerating losses. The fan had to be operated by a motor, however, and this was one of the pieces of equipment that Geppert had set out to eliminate. Another reason why the machine proved impractical was that when the ammonia vapors are absorbed by water, heat is liberated. The absorber therefore acts as a heater. Cooling water had to be provided in pipes located within the absorber. Notwithstanding this, heat liberated during the absorption rose into the evaporator space above, thus either entirely or partially counteracting the heat withdrawn from the surroundings by the evaporation of the ammonia. Effective refrigeration, therefore, could not take place, or only in a very limited degree.

"In the year 1901 Geppert produced another design, which was an improvement over the three previous models. He retained the idea of the combined vaporizer and absorber. This receptacle had a double wall, with cooling water circulating between the walls. A cylinder containing salt water was inserted in the receptacle at a slight distance from the inner face of the double wall of the receptacle.

"This apparatus was scientifically successful, as it had produced cold, but the pump still remained and the unit was not commercially a success.

Origin of the Servel Electrolux Machine

"After Geppert there was no development of any importance in absorption systems or machines until the year 1922, when two students, Baltzar Carl Von Platen and Carl Georg Munters, of the Royal Institute of Technology of Sweden, developed and designed a working model of this type, which dispensed with all moving and mechanical parts.

"This unit was later developed by Aktiebolaget Electrolux in Europe, and the Electrolux Servel Corporation in the United States, so that today, we have a workable and salable refrigerating unit that is indeed marvelous. In order to develop the present day product, large laboratories for research work were established in Stockholm, Sweden, and in Brooklyn, New York. In these laboratories developments and experiments are taking place so as to develop new types for further commercial application. How well this unit with refrigerator has been developed was evidenced at the American Gas Association convention at Atlantic City, where three complete refrigerators and an exposed unit were presented for the inspection of the gas industry.

"Exhaustive tests and experiments have developed a machine somewhat different than the original Swedish design. These changes have practically doubled the "ice melting capacity" of the machine and have greatly increased its efficiency. They have in addition perfected the machine for gas heat, instead of electric heat, and have reduced the quantity of cooling water needed to properly operate the unit.

"Some of the interesting points of this machine are as follows:

"1st—The maximum efficiency is obtained with a heat input of about 1,320 B. T. U. per hour, or, in other words, approximately 2.4 cu. ft. of gas per hour.

"2nd—The lower the cooling water temperature, the greater the efficiency.

"3rd—The machine will operate and produce ample refrigeration for domestic refrigerators with cooling water temperature up to 90° Fahrenheit and a 100° Fahrenheit room temperature.

"4th—Increasing the gas consumption beyond the point of maximum efficiency increases the capacity of the machine up to a certain point, but with a decrease in efficiency. This decrease, however, is so slight that it does not affect the usefulness of the machine.

"5th—The maximum capacity of the machine is reached with a heat input of about 1,560 B. T. U. per hour, or approximately 2.8 cu. ft. of gas. The capacity at this heat input is approximately equal to 3.2 lbs. of ice melting capacity, or 77 lbs. per 24 hours. This represents a daily gas consumption of 67 cu. ft. per day, for which we get 77 pounds of ice melting capacity, or in other words, for each cubic foot of gas burned we get 1.15 lbs. of ice melting effect.

"6th—The room temperature has a slight effect on the efficiency of the machine, but not enough to interfere with its operation within the range of ordinary temperatures.

"7th—In the event that the cooling water was to fail and the gas continues to burn, refrigeration would cease, but the maximum pressure that will be reached is approximately only 25% above working pressure, after which the heat is transmitted to the air without any further increase of pressure. As the machine has been tested to 3,100 lbs. per square inch without rupture, it can be readily seen that the factor of safety is over ten.

"8th—In the event of a fire occurring within the room in which the refrigerator installed, a fusible plug is applied to the machine, which releases at 200° Fahrenheit, and conforms to the standards set up by the code.

"By the use of a thermostatic control of the gas, it is possible to maintain constant ice box temperature.

"In territories where the water pressure varies considerably, it is deemed advisable to insert in the water line a water pressure regulator. A pressure of 2½ lbs. per square inch is more than ample to take care of the necessary flow of water through the absorber and condenser coils. In such territories where a great amount of sediment and mud is found, it is advisable to install a strainer between the water pressure regulator and the house service valve. In some communities, it will probably be necessary to clean these strainers every few months.

"In communities where a great variation in gas pressure exists, it is recommended that a gas regulator be installed. This particularly would apply in communities served by natural gas.

"To get an idea of the operating costs of this unit, I would say that in the New York City district, with $1.15 gas and $1.00 per thousand cubic feet of water, the cost of operating the unit for gas, allowing 2½ cu. ft. per hour as an average consumption, would be $2.07 per month, and allowing seven gallons of water per hour, the cost would be 70c, making a total operating cost of $2.77 per month, which is very cheap refrigeration. This is equal to allowing 75 pounds of ice melting effect per day, a total of 2,250 pounds of ice melting effect per month for $2.77, or for one hundred pounds of ice melting effect at a cost of a little over 12c per hundred pounds."

BOZELL ELECTED TO E. R. C. DIRECTORATE

HAROLD V. BOZELL

of Bonbright & Co., New York City, formerly editor of *Electric World* and of *Electric Railway Journal,* who has recently been elected a member of the board of directors, of the Electric Refrigeration Corporation, of Detroit.

Sanitary Refrigeration Company Elects Officers

At a meeting of stockholders of the Sanitary Refrigeration Company, Fond du Lac, Wis, held recently, the following officers were elected: William Mauthe, president; Herman Uihlein, Milwaukee, vice-president; B. K. Miller, secretary, and H. R. Potter, treasurer.

Frigidaire to Equip 42 Apartment New Haven Building

The Frigidaire Corporation has contracted for the installation of an electric refrigerating system in a 42-apartment building to be constructed for Mrs. Irene Young, on Elm Street, New Haven, Conn.

Application of Heat Principles to the Refrigerating System

(Continued from page 4)

there is always a volume of liquid within the evaporator of the flooded system tends somewhat to stabilize its operation, for this volume of refrigerant acts as a storage for the refrigeration just as a brine tank would. The outstanding advantage of the dry system is that its evaporator may be made in almost any shape or form in order to adapt itself to the space offered by the refrigerator. The rather large tank of the flooded type evaporator sometimes prevents its use where space is small or of an unusual shape.

The Brine Tank

In automatic electric ice cream cabinets it is almost universal practice to place the evaporator within a brine tank. The containers for the ice cream cans are built into this tank so that they are at all times surrounded by a volume of cold brine. Thus, not only does the brine serve as a path by which the refrigeration may travel from the evaporator to the ice cream can, but at the same time it permits of a storage of refrigeration and its attendant stabilization of the temperature of the system. The temperature of so large a volume of brine cannot be changed quickly so that it is possible to maintain an almost constant temperature in the ice cream with only intermittent operation of the system.

The same is, in general, true of refrigerating systems which are used to cool refrigerator boxes, but because of the higher temperature maintained there it is sometimes possible to do away with the brine tank and to place the evaporator directly in the space to be cooled. When this is done, however, the storage effect of the brine tank is lost and, in order to maintain even temperature, it is necessary to operate the compressor for short intervals very frequently. When the evaporator is used alone, its surface is usually not large enough to absorb the heat from the box at a rapid enough rate so that it is necessary to equip it with large metal fins to make up for this deficiency.

Operating Characteristics

The operation of the large manually controlled refrigerated system, may usually be so controlled as to cause the machine to produce refrigeration at any rate from zero to its maximum output. That is, the output of the machine may be controlled to suit the load placed upon it. In this respect, it differs from the small automatic unit, in that the latter, when operating, does so at its maximum capacity. The temperature of the small refrigerating unit is controlled by running the machine at intervals, starting it when the temperature rises high and stopping it when it has been reduced to the desired degree. For this reason the temperature produced by the small refrigerating unit is not absolutely constant, but rather varies, somewhat according to the accompanying sketch, which shows the temperature rising during the inoperative period and lowering again, during those periods in which the machine is running.

It must be understood that the temperature portrayed by the above sketch is that either within the brine tank, if such a unit is used, or if not, in close proximity to the evaporator. The temperature of the articles being refrigerated, whether ice cream or other food products, does not vary nearly so much as does the temperature of the evaporator itself. In an ice cream cabinet in which the brine temperature is permitted to vary as much as 10 degrees, it is said that the ice cream temperature varies no more than two degrees.

The Control

A great many of the present style machines are controlled by thermostats. The bulb of the thermostat is placed either in the brine tank, if one is used, or in the refrigerator box itself. The thermostat is connected to a switch in the electric circuit and is made to close the switch when the temperature of the box becomes high and open it again when the temperature is reduced to the proper degree. The temperature limits at which the thermostat causes the switch to operate are adjustable and in most cases can be set by the user of the equipment himself.

Another type of control is actuated by the pressure in the evaporator, this pressure, as we know, being dependent upon the temperature in the evaporator. A small gas line is therefore run from the evaporator to a bellows which is connected to the switch. When the evaporator temperature rises, so does its pressure, and the bellows is thus made to force the switch to close and therefore starts the machine. When the temperature in the evaporator is reduced by means of the operation of the machine, the pressure likewise goes down and the bellows is then caused to open the switch. Systems of this nature have proven themselves to be very dependable and are perhaps more widely used than any other. A much more complete description of the controlling system will be found later on in the course, when the Nizer control is studied.

As was stated at the beginning of the lesson, this is the last lesson of the series which deals with the principles of heat and refrigeration. From now on, we shall leave these principles and shall go on to a study of the Nizer Electric Ice Cream Cabinet, its construction, operation and service. In view of this, it is highly important that the student understands thoroughly the principles which have been set forth in these first six lessons, and if such is not the case, he is urged to bring his questions to the attention of the correspondence department, in order that his difficulties may be cleared up before proceeding to the study of other matters.

N.E.L.A. REFRIGERATION COMMITTEE BULLETIN

(*Continued from page 3*)

"Refrigeration and Cooking Rate"

By L. R. Wallis, superintendent of sa'es, Edison Electric Illuminating Co. of Boston. December, 1926, issue of *Electric Light and Power*. Article discusses advantage of having heating and refrigeration load on one meter. Explains rates filed with Massachusetts Department of Public Utilities by Boston Edison Company on June 26, 1926.

"Symptoms and Remedies Charted for Central Station Service Men"

By G. U. Carpenter, general manager Frigerator Division, General Necessities Corp., Detroit, Mich. December 8, 1926 issue of ELECTRIC REFRIGERATION NEWS. The article contains the common sens causes of service calls on electric refriger ators and interprets service chart that i published in same issue. The chart is par ticularly valuable to distributors' servic and electric service company men.

"New Jersey Public Service Goes After Business Systematically"

By R. W. T. Ricker. December 22 1926, issue of ELECTRIC REFRIGERATION NEWS. The article gives good word picture of methods used by New Jersey public service corporation in stimulating sales and use of advertising.

"Electric Refrigeration Show Sells 200 Units"

December, 1926, issue of *Electrical Merchandising*. Article covers returns of an electrical refrigeration exhibit in Boston, Mass., held by the Edison Electric Illuminating Co. of Boston.

"A Carload of Refrigerators a Week"

December, 1926, issue of *Electrical South*. Article tells the story of selling 366 electric refrigerators during a seven-week campaign, a thirty-day trial offer being the feature of the campaign.

"Commercial Electric Refrigeration Sales. Field Is Large and Still Growing"

December, 1926, issue of *Electrical Record*. Manufacturers' viewpoint of the many commercial applications of electric refrigeration, together with opinions as to the sales field for this branch of the electrical industry, and recommended method of distribution.

"Electrical Record Announces an Encyclopedia"

Correct to December 1st, 1926, giving names and addresses of manufacturers of electric refrigerators, together with specifications for each type. Copies can be procured from *Electrical Record*, 461 Eighth Avenue, New York, N. Y.

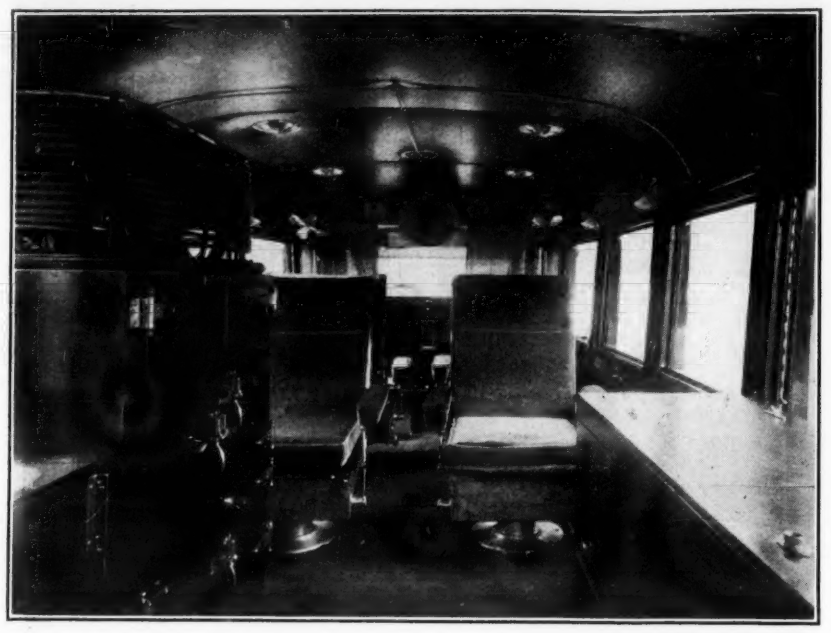
"First Aid for Regulator Troubles"

By A. D. McLay, sales engineer the Detroit Edison Co, Detroit, Mich. December, 1926, issue of the Detroit Edison *Synchroscope*. Mr. McLay tells experience of the Detroit Edison Company in servicing electric refrigeration, and reception of this plan by the manufacturers and the public. The *Synchroscope* is published by the Detroit Edison Co.

"The Fractional Horsepower Motor Situation"

By A. D. McLay, sales engineer the Detroit Edison Co., Detroit, Mich. At the 42nd annual meeting of the Association of Edison Illuminating Companies, held at Quebec, Canada, a paper was presented by Mr. McLay setting forth the fractional horsepower motor situation as it exists and pointing out the direction along which improvements can be made. Copies of the paper can be obtained by writing to the Secretary of the Association of Edison Illuminating Companies, 80th Street and East End Avenue, New York, N. Y.

Motor Stages and Privately Owned Motor Palaces Creating New Demand For Electric Refrigerators



Many motor stages and privately owned motor palaces are now installing refrigerators and ice making machines to such an extent that this new field cannot be overlooked.

An unusual installation is shown in the accompanying photos, showing a motor palace owned and operated by W. K. Kellogg, the food manufacturer. Fond of travel, Mr. Kellogg has toured India, Japan and China, and through virtually all European countries. Now, with his club car, he is renewing his acquaintance with America's wonders in a more leisurely and intimate way.

With his automotive home there is no further need to "check your baggage and come back later" for a room and bath. Now you just drive and drive and stop where you please. In the wildest wilderness, if you like, without the slightest inconvenience—comfortable sleeping berths, shower baths, ample cooking facilities, cracked ice made as you ride, market news and entertainment by radio. The club car has all these conveniences and more. Innocent looking panels of mahogany here and there conceal unlooked-for appointments.

The Kellogg motor palace is finished in mahogany and the finest of leathers throughout. Entrance and exit may be made through five doors. The driver's compartment is separated by a sliding glass partition. The forward part of the car is equipped with four revolving chairs with adjustable backs, head rests and arms which can be quickly converted into full sized berths for two. The forward section may readily be transformed into a cozy dining room by the introduction of a folding table, which, when not in use, is concealed in a panel at the side of the car. The kitchen equpiment includes an electric refrigerator, an electrci power plant in the rear section, furnishing current for this equipment as well as for the lamps and fans. The water supply for the entire coach is provided by a 40-gallon tank, pressure being maintained at all times by means of a pump driven by a power take-off on the transmission.

Electric Refrigeration and Food Preservation Discussed at Home Makers Exposition

Modern refrigeration and the preservation of foods was the joint topic that came in for much discussion at the Home Makers' Exposition held recently in Brattle Hall, Cambridge, Mass.

Homer B. Parks, of the Kelvinator company, Boston, Mass., was one of the principal speakers. Mr. Parks described briefly the working principle of the electric refrigerator, and stated that the mechanical perfection of the electric machine made it possible to create and hold any temperature for hours at a time. He pointed out that 50 degrees was the correct temperature for the proper preservation of foodstuffs.

Miss Pauline Clapp, graduate nurse and dietitian for the Kelvinator company, also spoke on modern refrigeration. Miss Clapp said that 45 per cent of the deaths in this country were due to eating bad food. Improper preservation of foodstuffs causes a high rate of bacterial growth. In the average ice box, milk will keep only a few hours. Electric refrigerators are able to keep milk free from any harmful bacteria for weeks. Therefore, the modern refrigerator, by properly preserving foodstuffs, will save the lives of thousands of people.

AIRPLANE FIRM TO MARKET ELECTRIC REFRIGERATORS

R. M. Burdick is President of New Organization—New Factory Purchased

The American Engine and Airplane Co., of Los Angeles, Calif., announces plans for the manufacture and marketing of a small electric refrigerator. R. M. Burdick is president of the new organization, which is to be known as the American Refrigeration Company of America.

Mr. Burdick states that purchase has been made of one of the finest plants in Southern California for the manufacture of the refrigerators. "We are just starting into the manufacture of small electric refrigerators of our own design, which we have been working on for some time," he said. "We will soon be in a position to hire first-class men for the different branches, such as assistant sales managers, machine shop men, trouble shooters, etc. If you hear of any of these people who would like to come to California, I will appreciate it very much if you will have them get in touch with me."

Joins Frigidaire Sales Corporation at Hartford

Joseph F. Howley, Hartford, Conn., formerly with the advertising department of the *Hartford Courant*, has joined the Frigidaire Sales Corporation of Hartford. He will be engaged in advertising and sales promotion. The company plans to conduct an extensive local advertising campaign.

Milwaukee Men Back Valerius Company

The Valerius Corporation, of Jefferson, Wis., manufacturers and distributors of iceless cabinets, fountains and refrigerators, was recently incorporated for $200,000. The incorporators of the concern are Theo. Valerius, Peter J. Hayes and Walter H. Bendfelt, all of Milwaukee.

Subscription Blank

BUSINESS NEWS PUBLISHING CO.
409 EAST JEFFERSON AVENUE
DETROIT, MICH.

DATE.....

Gentlemen:

Please enroll me as a subscriber to ELECTRIC REFRIGERATION NEWS, the Business Newspaper of the Electric Refrigeration Industry, at the rate specified below.

United States: ☐ Two years, one dollar ☐ One year, seventy-five cents

Foreign Countries: ☐ One dollar per year. ☐ Send next ten issues by first class mail, 25 cents extra.

I am enclosing payment in the form of

☐ Check ☐ P. O. Order ☐ Cash ☐ Stamps

Name .....

Company .....

Street Address .....

City and State .....

☐ NOTE: If it is inconvenient for you to enclose payment with this order, check this square and invoice will be mailed. Do it now, while you have the blank before you. It will save the time and trouble of writing a letter and you will be sure to get the next issue.

"The Biggest Little Paper"

A Southern distributor of a well-known electric refrigerator writes as follows:

"We are just in receipt of Electric Refrigeration News and we must say that we appreciate it very greatly, the fact is that we have passed these copies on to another party now who will in all probability become a dealer and this little sheet will be instrumental in bringing about this connection.

"We were wondering if we cannot subscribe to this paper so as to receive *three* copies each month, and at what price for three years, all three copies coming to one address, for we see instances many times where we can do some good by giving a prospective dealer a copy of this little paper.

"It is our intention to have every man in our employ a subscriber and to have each dealer in our territory to subscribe.

"It is our desire to file away a copy of each issue, together with 1 copy of each preceding issue if you can furnish us with same.

"Assuring you that we appreciate the valuable copies you have so generously sent us and awaiting your answer regarding the extra copies and the three-subscription price, etc.

"P.S. THIS IS THE BIGGEST LITTLE PAPER WE HAVE HAD THE PLEASURE OF READING."

THANK YOU

"I have just finished looking through the anuary 5 issue of ELECTRIC REFRIGERATION NEWS. May I tell you that I like it immensely, that I think it is as chock full of news as can be, that it is excellently put together and printed—and altogether a splendid job?"—HERBERT R. MAYES.

"The writer always looks forward with a great deal of interest to the arrival of the NEWS."—LESLIE E. MILLER, Frigidaire Sales, Tulsa, Okla.

"You know the old saying is that 'anything that is good will prevail,' so we feel quite sure that the good work you are doing and can do for electric refrigeration in general will be greatly appreciated."—C. C. HENRY, Asst. Director of Sales, Socold Refrigerating Corp.

"I think it is a wonderful paper—"Sharp Lessons Taught in 1926," by C. U. Carpenter, in the issue of January 5th, certainly bears reading by every man connected with an organization that has selling problems to solve. This article is an expression of my own idea in regards to training salesmen. A salesman must be trained not only before he starts out on the road, but we must continue to train him while he is on the firing line of selling."—MARK MCGHEE, New York.

CLASSIFIED COLUMN

Note: Replies to advertisements with "box numbers" should be addressed to Electric Refrigeration News, 409 E. Jefferson Avenue, Detroit, Michigan.

REFRIGERATOR SALESMAN WANTED

Company manufacturing metal refrigerators complete line, desires the services of an experienced refrigerator salesman. Must have wide acquaintance electrical unit manufacturers. Give complete history in first letter. Box 9 Electric Refrigeration News.

WANTED

Factory Manager household refrigerating manufacturing plant in East. Familiar with modern production methods, mechanical, electrical, methyl chloride. Write in confidence, giving full details of past experience and present connection if any, to "Factory Manager," Box 11, Care Electric Refrigeration News.

SALES EXECUTIVE

For a corporation engaged in electric refrigeration; must be a man of strong personality, energy and initiative, experienced handling sales organizations, creating sales promotion plans, originating advertising ideas; for the proper man, willing to make an investment of $15,000 or more a permanent and profitable association, with a going concern, is afforded; the strictest confidence will be given replies, which must be in detail regarding experience, &c.; no brokers. Box 15, Care Electric Refrigeration News.

Opportunity for Engineers

One of the oldest and largest manufacturers of electrical refrigeration in Detroit is seeking the services of additional assistants in their Engineering Department, and will be glad to consider the applications of young men who have had some electrical refrigeration experience and who are anxious to ally themselves definitely with that field of endeavor.

Please reply to this advertisement by letter, addressing your communication to the box indicated below. In your letter give a complete history of your education, general and technical, and cite your experience in electrical refrigeration engineering and production. Your application will be carefully considered and held strictly confidential. Address Box 13, Electric Refrigeration News.